

in interpreting it, and in passing upon motions and other requests from the parties. Further, as there stated, notwithstanding the contrary views of the Regional Companies and the Department of Justice,³¹⁸ the Court has no doubt of its authority to continue to do so, where there is no inconsistency with the antitrust laws or the factors underlying the approval of the decrees as expressed in the Opinion which effected such approval.

Accordingly, the Court will, in the present context, once again take into account values in addition to those stemming exclusively from an environment free of anticompetitive activity, in this case the benefits to the American public from expanded, intelligent, widely available information services transmitted through an infrastructure operated by the Regional Companies. The divestiture of the Bell System, and the decrees which brought it about, were not mere exercises in abstract reasoning; they had as their fundamental purpose the promotion of competition in the telecommunications market, to the end that the American public, including the American consumer, might benefit from today's and tomorrow's telecommunications technology in this information age.

The wide dissemination of information services is a key ingredient in that design. As indicated, the French information services scheme permits individual citizens to secure an enormous number and variety of information services with ease and at reasonable cost. While the two nations are not comparable in many other ways, they are surely not dissimilar in regarding as a positive value the access of the citizenry to a variety of sources of information. To the extent that this objective can be promoted through a relaxation of the information services restriction in the decrees along the lines outlined above, the Court is prepared to do so.

For the reasons stated, the Court will exempt from the information services restriction the transmission of information

generated by others in the manner and to the extent described above. However, in light of the not fully complete descriptions in the record of the various ingredients that are necessary to an information transmission system, juxtaposed against the need for precision (see pp. 596-97, *supra*), the parties and interested intervenors are invited to submit proposed orders, accompanied by memoranda, consistent with this Opinion, detailing the necessary ingredients with greater particularity.

IX

Non-Telecommunications Services

[17] Section II(D)(3) prohibits the Regional Companies from "provid[ing] any other product or service, except exchange telecommunications and exchange access service, that is not a natural monopoly service actually regulated by tariff." *AT & T*, 562 F.Supp. at 228. This catch-all restriction prohibits the companies from participating in "unrelated businesses" in which they might have the ability to obtain improper competitive advantages by leveraging their control over the local monopolies. *Id.* at 195 n. 267.

Unlike the core restrictions, the section II(D)(3) prohibition was not imposed on the basis of any specific evidence of anticompetitive activity in non-telecommunications markets by AT & T or its subsidiaries, nor could it have been: by virtue of the 1956 consent decrees, the Bell System was not engaged in non-telecommunications business enterprises. Section II(D)(3) rested instead on the proposition that, when an entity with a significant telecommunications monopoly enters some other, competitive business, there is both an incentive and an ability to act anticompetitively. The restriction also reflected the notion that, by limiting the Regional Companies to traditional local exchange services, the goal of the provision of efficient, economical telephone service would be furthered. *Western Electric Co.*, 592 F.Supp. at 855-58.

318. The Department has, however, acknowledged the legitimacy of a cost-benefit test. See

p. 587, *supra*.

Whatever the theoretical basis for the inclusion of this restriction in the decree, the Court made it clear that a Regional Company could petition for removal of that restriction, and the Court would grant that petition—it would “waive” the restriction—if “there was no realistic possibility of abuse of monopoly power.” *AT & T*, 552 F.Supp. at 195 n. 267.

The Court assumed at the time of the entry of the decree that the Regional Companies would not have any substantial interest in entering unrelated businesses, and that the line-of-business waiver requests to enter non-telecommunications markets would therefore be rare.³²⁰

That expectation turned out to be erroneous. Instead of the occasional request for a waiver for the operation of a cafeteria in a telephone company building, dozens upon dozens of far-reaching requests were filed almost immediately after divestiture. The Court accordingly established procedures for the handling of waiver requests, involving initial screening and recommendation by the Department of Justice, with opportunities for opposition or other comment by interested parties, prior to final court decision. *Western Electric Co.*, 592 F.Supp. 846. Since 1984, the Department of Justice has reviewed and favorably recommended over one hundred sixty waiver requests, and the Court has granted every one of these requests. *AT & T Comments* at 114.³²¹

However, the Court has typically imposed four conditions as part of the grants of the requests: that the new competitive

business be operated through a separate subsidiary; that the subsidiary obtain its own debt financing on its own credit, as distinguished from that of the Regional Company's telephone affiliate; that the total estimated net revenues for all the non-telecommunications activities engaged in by a Regional Company pursuant to waiver not exceed ten percent of that company's total net revenues; and that the monitoring and visitorial provisions of section VI of the decree shall apply to that subsidiary.

The purposes sought to be accomplished by these restrictions included *inter alia* the facilitation of the policing of the prohibition on cross-subsidization; protection, to the extent possible, of the financial soundness of the local telephone companies; making certain that the Regional Companies maintained adequate resources to complete implementation of equal access; and attempting to ensure that the Regional Companies would not neglect and undermine local telephone service by a concentration on and the allocation of resources to entirely unrelated businesses. *Western Electric Co.*, 592 F.Supp. at 870-72.³²²

The Department of Justice and the Regional Companies now request that the non-telecommunications restriction be entirely removed. Necessarily, this would require that the waiver process also be discarded. It is convenient, for purposes of analysis, to distinguish between the removal *per se* of the restriction and the disappearance of the conditions that the Court has customarily attached to waivers with

320. See *Western Electric Co.*, 592 F.Supp. at 853 n. 11, 858.

321. The Court has denied only requests that were filed ostensibly pursuant to section II(D)(3) but that actually presented attempted incursions by a Regional Company into businesses covered by one of the three core restrictions. Further, when feasible, the Court imposed conditions on the granting of other requests in order to prevent such incursions. See, e.g., Orders dated August 22, 1985 (U S West) and March 13, 1986 (Ameritech) (financial service waivers conditioned to prevent Regional Company financing of equipment manufacturers, interexchange services, and information services); Opinion dated February 26, 1986 (Pacific Telesis waiver to acquire Communications

Industries, Inc., conditioned on divestiture of CT's equipment manufacturing and telephone answering service operations).

322. In some cases, in response to concerns of interested persons that have commented to the Court or the Department of Justice, the Regional Companies have also accepted additional conditions, such as to prevent cross-subsidization through asset transfer. Interestingly in light of its current attitude, in July 1984, at the time of the formulation by the Court of the four general conditions discussed in the text *supra*, the Department of Justice recommended that the Court impose eight much more far-reaching conditions with respect to all waivers. *Western Electric Co.*, 592 F.Supp. at 870.

respect to entry into non-telecommunications markets.

It seems fairly clear that the restriction itself may safely be removed pursuant to section VIII(C) of the decree. Almost all of the parties and intervenors that have addressed the section II(D)(3) issue have concluded that there is no substantial risk that Regional Company participation in non-telecommunications business would permit leveraging of exchange monopolies.³²³ That conclusion is also supported by the experience that, following review by the Department of Justice and the Court, every one of the waivers requested in this field was granted.

More problematical is the cross-subsidization issue that the Court sought to address in part by the conditions it attached to the waivers. There is no question but that the removal of the restriction on entry of the Regional Companies into non-telecommunications markets does raise the concern that their operations in these markets will be subsidized by revenues extracted from the rates that are being paid ostensibly for local telephone service. Indeed, as discussed in Part VII, particularly pp. 581-83, *supra*, notwithstanding various restrictions and conditions, such diversions appear to be taking place even now.

As against this continuing problem must be weighed that (1) there is little demand from potential competitors for retention of the restriction; and (2) the relative paucity of joint and common costs between exchange operations and non-telecommunications ventures renders it more difficult to cross-subsidize on a continuing basis in

large amounts in this area than in telecommunications-related markets.

In the opinion of the Court, while the issue is by no means open and shut, the balance of factors favors the removal not only of the restriction itself but also of the conditions heretofore attached to restriction waivers. That balance is achieved in part by several public policy or cost-benefit factors (Part VII-B): (1) the waiver process with respect to this non-telecommunications field places a substantial burden on Regional Company planning and decision-making; and (2) this process involves the Court on a fairly significant scale in Regional Company business decisions when the final outcome, at least thus far, has always been the issuance of a waiver; and (3) if the restriction itself has become obsolete, the retention of conditions becomes somewhat unrealistic.

Absent weightier competitive considerations than are present here and now,³²⁴ it is appropriate, therefore, that these companies be freed of detailed judicial oversight of their decisions. There is, of course, independent philosophical utility in a departure of a judicial body from the adjudication of matters that are not likely to present substantial problems in terms of compliance with the antitrust laws.³²⁵

For these reasons, the Court will remove the restriction embodied in section II(D)(3) of the decree on the entry of the Regional Companies into non-telecommunications ventures. Consistently with that decision, the four conditions heretofore imposed as part of past waivers of the section II(D)(3) restriction will also be dissolved.

at least conceivable that the FCC, possibly with a mandate from the Congress, will see its way clear to address this problem should it assume substantial significance.

323. See, e.g., National Association of Regulatory Utility Commissioners, *Summary Report on the Regional Holding Company Investigations* at 5 (Sept. 18, 1986); see also *Western Electric Co.*, 592 F.Supp. at 853.

324. There is, to be sure, also the somewhat more amorphous risk that the Regional Companies, in their zeal to diversify, will neglect the relatively pedestrian, regulated telephone operations, and concentrate their resources and managerial skills instead upon more glamorous, albeit more speculative, business opportunities. At least one of the usual waiver conditions was designed to deal with this issue. However, it is

325. Some have suggested, e.g., Computer and Business Equipment Manufacturers Association at 28, that termination by this Court of the waiver process could result in the filing of a great number of separate antitrust suits throughout the land. For the reasons stated, the Court does not believe it likely that many meritorious antitrust actions will develop.

X

Conclusion

The purpose of the decree in this case is not to assist one company or another, nor is it to promote abstract antitrust theory or divestiture as part of some broad ideological scheme. Rather, it is the decree's purpose to allow consumers to reap the benefits of competition in telecommunications that competition has generated for a hundred years or more in a myriad of other fields. It is with that basic philosophy in mind that the Court has approached the present set of motions, requests, and reports.

A. Core Restrictions

Although it may be difficult to recall this now, the fact is that for thirty years prior to 1984, the Congress, the courts, the Federal Communications Commission, and state regulators wrestled with the problem of what to do about the Bell System monopoly, its arrogance in dealing with competitors and consumers, and its power to shut out competition. One Department of Justice lawsuit was filed and aborted; regulators issued edicts that were largely ignored; Congress investigated but could not come to a decision; and a second federal lawsuit and several private actions were filed in the courts where they remained pending for a number of years. In the meantime, competitors languished and the American ideal of free and fair competition remained absent from the telecommunications industry.³²⁶ When ultimately the decree that governs this case was negotiated between the parties and approved by the Court, it resolved the problem of claimed monopolistic conduct in telecommunications by going to its root.

That root was the control by the Bell System of the local telephone switches—in which it had a monopoly—and its simultaneous presence in several other markets (long distance, telecommunications manufacturing, and information services)—in which it had competitors. The competitors

in each of these markets were suffering from an insuperable disadvantage: they could reach their ultimate customers only by connecting their circuits and products to the Bell System's local switches, the only technologically available avenue to the homes, offices, and factories of America where the individual telephone instruments are located. It followed that these competitors were at the mercy of the Bell System's managers, who could with ease discriminate against them by such practices as delaying interconnections, providing inferior connections, charging exorbitant prices, or refusing to attach competitors' products altogether. The Bell System was also able to subsidize its competitive products with funds syphoned off from the monies paid in by the ratepayers, thus to undercut the prices charged by independent firms and drive them out of business.

The quite predictable result was that no independent long distance, manufacturing, or information company ever really got off the ground: for practical purposes, the Bell monopoly remained just that. Since exhortations, regulations, and orders requiring a cessation of the Bell System's activities had proved fruitless, the remedy adopted in the decree, as simple as the problem itself, had but two basic aspects: first, the divestiture from AT & T of its local monopoly affiliates (thus forcing AT & T's other enterprises, all competitive, to stand or fall on their own); and second, an order prohibiting the new owners of the local bottlenecks—the Regional Companies—from engaging in the competitive long distance, manufacturing, and information services markets (so as to make it impossible for them to duplicate the Bell practices, now that *they* controlled the bottlenecks).³²⁷

These simple yet drastic measures have already begun to bear fruit for the benefit of competition and of the users of the telephone. Contrary to much popular belief, the overall trend with respect to telephone rates is down,³²⁸ and the cost of

326. See generally, Part I, *supra*.

327. See Part II-A, *supra*.

328. Long distance rates have declined in the last three years by roughly thirty percent. Local rates are not affected by the decree because, for technological reasons, they have had to remain

telephone instruments is down dramatically.³²⁹ More importantly, competition has brought about innovations in telephone features on a scale and variety unknown before divestiture.³³⁰ While complaints about that divestiture and the ensuing inconveniences have by no means ceased, an understanding is beginning to emerge that these temporary dislocations are a necessary price for what the newly competitive marketplace can achieve.

It is the attempted destruction of that careful design that the motions now before the Court are all about. Almost before the ink was dry on the decree, the Regional Companies began to seek the removal of its restrictions. These efforts have had some success, in that they have tended to cause the public to forget that these companies, when still part of the Bell System, participated widely in anticompetitive activities, and that, were they to be freed of the restrictions, they could be expected to resume anticompetitive practices in short order, to the detriment of both competitors and consumers. Regional Company claims of wishing only to participate with others in long distance and other restricted businesses on a level playing field obscure the

in the monopolistic control of the Regional Companies which, as noted at pp. 581-82, *supra*, were able initially to raise those rates. However, as a consequence of greater public and regulatory awareness and resistance, local rates rose only slightly during the current year, while long distance rates continued their substantial decline. Indeed, some regulatory commissions turned local rate increase requests in the first half of 1987 into rate reductions totaling \$92.4 million. *Communications West*, August 24, 1987, at 30.

329. When the Bell System monopoly had full control, it refused to sell its telephones to consumers, or to permit anyone else to sell them, preferring to charge rentals in the neighborhood of \$5-7 per month or more, for a total in any thirty years, of over \$2,000. Today, telephone instruments can be purchased in retail stores everywhere for \$25-30 and up. Even if new instruments were purchased from time to time, the total cost would still be far below the unending rental fees.

330. There are now on the market at reasonable prices such by now commonplace features as residential telephones that are able to memorize dozens or hundreds of different phone numbers. *Id.*

fact that there is no level playing field when one of the participants holds an unsalable franchise on the goal lines that no one else may touch without its permission.

By direction of the decree itself, the restrictions placed on the Regional Companies may be removed only if these companies demonstrate that "there is no substantial possibility that they could use their monopoly powers to impede competition in the markets they seek to enter." The decree rests on the premise that the incentive and the ability to act anticompetitively existed in 1984 when that decree was entered, and the question before the Court therefore is only whether events in the three years since then have changed that situation.³³¹ Essentially three types of changes are claimed to have occurred.

First, it is argued that the local monopoly bottlenecks have been either wiped out or substantially eroded. However, by the finding of the Department of Justice's own expert, these bottlenecks are still so pervasive that only one in one million telephone users is able to bypass them to communicate with his ultimate customers on his own; the remaining 999,999 users remain

bars; telephones that repeat the last number called until it is no longer busy; cellular phones for business and emergency use; cordless phones; instruments that can be instructed by voice (e.g., in an automobile) to call a certain individual, office, or number; and many others.

Parallel with the development of equipment that provides greater accessibility to the telephone user, devices are being produced and marketed that, in a sense, operate in the opposite direction: some of them display the caller's number before the receiver has been lifted; others provide a distinctive ring when a call is received from a number previously designated as worthy of priority consideration; still others automatically block calls from persons with whom the phone's owner does not wish to speak. For the first time since the invention of the telephone, these devices are returning control to the instrument's owner from every salesman, wirewoman, relative, or even crackpot who may decide to call at any hour of the day or night.

It is surely not a coincidence that these features, and many more, have become available since the Bell monopoly was ended by divestiture and competition began to reign in the telecommunications marketplace.

331. See Part II, *supra*.

strictly dependent for local connections upon the Regional Company monopolies.³³² Second, it is said that there are now seven Regional Companies instead of one nationwide Bell System. While that is certainly true, it is not a new development; it was foreseen and even mandated by the very decree that requires a *future* change in circumstances before the line of business restrictions may be removed. Moreover, in terms of monopoly power, the combined Regional Companies more or less equal the Bell System.³³³ Third, suggestions have been made that, unlike at the time of the entry of the decree, federal regulation can now prevent anticompetitive abuses. But FCC regulation, far from being more stringent than before, is today actually less so, for reasons of reductions in staff and changes in regulatory philosophy, among others. And although new and possibly stricter regulations have been discussed, they have not thus far been adopted; they are not even in final form; and they will not become effective, if at all, until next year or the year after that. Their ultimate impact on anticompetitive activities is therefore entirely speculative.³³⁴

The Court has accordingly concluded—it could not but conclude—that no significant changes have occurred with respect to the core restrictions—long distance, manufacturing, and the sale of information services—that would justify a radical change in the decree.

When the law and the facts are thus examined dispassionately, it becomes readily apparent that there is less to the Regional Company contentions than meets the eye. Indeed, had it not been for the drumbeat of a wide-ranging public relations campaign, no one would have seriously entertained the proposition that a solution arrived at after a thirty-year struggle, that had caused a major and wrenching change in the structure of the industry and the habits of most American telephone users, should be jettisoned in substantial part after a mere three years, particularly when

the changes that have occurred in the interim in the power of those who control the local switches are insignificant.

If the interexchange and manufacturing motions were granted, the telecommunications industry would be back where it was when these struggles began. The Regional Companies would have the same incentives as well as the same means for discrimination, manipulation, and cross-subsidization that the Bell System possessed before the break-up.

Once before, in 1956, an antitrust suit against the Bell System was aborted precipitously by a Department of Justice decision,³³⁵ and that step laid the groundwork for many years of turmoil and travail in the industry, the courts, the regulatory commissions, and the Congress. That history must not be repeated. This Court cannot and will not lend its authority to so self-defeating an enterprise. It is therefore denying all the requests for the removal of the core restrictions of the decree.

B. *Transmission of Information and Catch-All Restriction*

At the same time, the Court is ordering the removal of two other restrictions where this will yield significant benefits without serious risk of harm to competition.

First. The wide-ranging yet diffuse "catch-all" restriction on the entry of the Regional Companies into all non-telecommunications markets is being repealed outright. Experience has shown that no substantial purpose is being served by requiring the Regional Companies to petition the Court whenever they wish to enter a business having no direct relationship to telecommunications, and where the risk of anticompetitive activity is relatively small. Indeed, the Court has to date granted over 160 "waivers" of this restriction and refused none. Although some danger of improper cross-subsidization remains, the benefits from a removal of this restriction outweigh that danger in this circumstance. Elimination of the restriction will also have

332. See pp. 539-40, *supra*.

333. See pp. 547-48, 555-56, *supra*.

334. Part VI, *supra*.

335. See pp. 529-30, 535-36, *supra*.

the beneficial effect of permitting the Regional Companies hereafter to make decisions with respect to substantial segments of their business without day-to-day involvement or supervision by the Court.³³⁶

Second. One of the core restrictions of the decree prohibits the Regional Companies from providing information services. The Court is retaining that restriction insofar as it involves the generation of information content, for the same reason that it is retaining the other core restrictions. If the Regional Companies had the authority to sell information in competition with other providers of these services, their control of the networks essential to the distribution of that information would give them the same ability to discriminate against competitors as they have with regard to interchange services and the manufacture of telecommunications equipment.³³⁷

That does not mean, however, that the public must be deprived of the revolutionary changes that are possible if information, instead of being transmitted only by current methods,³³⁸ can also be made available to vast numbers of consumers instantaneously by means of the telephone network. Other nations—France in particular, but also Japan and Great Britain—have experimented with such an innovative use of the telephone system, with some considerable success. The French Teletel system—which may for present purposes serve as a rough guide in this regard—has some three million subscribers and is used to supply to these subscribers immediate access to about 4,000 independent services supplying specific information upon request in such fields as banking and brokerage, shopping (availability and price), travel (schedules and reservations), tickets to entertainment and sporting events, employ-

ment availability, language instruction, governmental notices, schedule of meetings of associations, reprints of newspaper and magazine articles, and others.

The Court has concluded that the apparently competing interests—prevention of monopolization of information services versus broad availability of such services to the public—can be reconciled by severing for decree purposes the generation of information content (which will remain prohibited to the Regional Companies) from the transmission of information services (which the Regional Companies will be allowed to provide).³³⁹

The Court will accordingly lift so much of the information services restriction as prevents the Regional Companies from constructing and operating a sophisticated network infrastructure³⁴⁰ that will make possible the transmission, on a massive scale, of information services originated by others, directly to the ultimate consumers.³⁴¹ No one can know with certainty whether this revolutionary means of transmitting useful, readily-available information will find acceptance in this country to the same extent as it has elsewhere. But the Court believes that it should do what it legitimately can to foster the availability of such a service.

The decisions made herein continue to advance the objectives of the decree as the Court understood them when it approved that decree in 1982, and in its rulings since then: (1) the establishment in the telecommunications industry of conditions of fair competition, freed from of the heavy hand of monopoly; (2) the protection of the goals of universal service and of reasonable rates for those who could not otherwise afford telephone service; and (3) the encouragement of innovation, to the end that the full

336. Part IX, *supra*.

337. Part V, *supra*.

338. *E.g.*, by contacting a public library, through the mails, or by advance subscription to one of the existing information services.

339. See Part VII, *supra*.

340. Part VIII, *supra*.

341. In order to receive this information in usable form, these consumers will not require, as now, a complex FAX to unscramble and receive it, or even a full-fledged computer terminal; they will only need to have what is called a "dumb terminal"—a relatively inexpensive instrument that could be sold both by the Regional Companies and by more conventional retailers.

benefits of a sophisticated telecommunications industry be made available to all segments of the American public in this Information Age.



UNITED STATES of America,
Petitioner,

v.

Billie Priner GARDE, Respondent,
and

Government Accountability Project,
Intervenor-Respondent.

Misc. No. 87-374.

United States District Court,
District of Columbia.

Oct. 27, 1987.

United States petitioned to enforce Nuclear Regulatory Commission subpoenas. The District Court, Thomas F. Hogan, J., held that Nuclear Regulatory Commission subpoenas seeking to compel attorney for nonprofit "whistleblower" organization to disclose all information, including client identities, in her possession concerning safety of nuclear power project in Texas would not be enforced.

Petition denied.

Administrative Law and Procedure §§883
Constitutional Law §971

Electricity §98.5(3)

Nuclear Regulatory Commission subpoenas seeking to compel attorney for nonprofit "whistleblower" organization to disclose any and all information, including client identities, in her possession concerning safety of nuclear power project in Texas would not be enforced; subpoena was not narrowly drawn to avoid unnecessary abridgment of constitutionally protected

associational rights, and NRC failed to explore alternative means to obtain information sought. U.S.C.A. Const.Amend. 1; Atomic Energy Act of 1964, §§ 161(c), 288, as amended, 42 U.S.C.A. §§ 2201(c), 2281.

Mark Nagle, Asst U.S. Atty., Washington, D.C., for petitioner.

Marya C. Young, Thomas J. Mack, Jones, Mack, Delaney & Young, Washington, D.C., for respondent.

Patti Goldman, Public Citizen Litigation Gr., Washington, D.C., for Government Accountability Project.

MEMORANDUM OPINION

THOMAS F. HOGAN, District Judge.

The United States of America petitions to enforce a Nuclear Regulatory Commission subpoena to compel an attorney for the Government Accountability Project, Billie Priner Garde, to disclose any and all information, including client identities, in her possession concerning the safety of a nuclear power project in Texas. The Court finds that the subpoena is not narrowly drawn to avoid unnecessary abridgment of constitutionally protected associational rights. Accordingly, the petition shall be denied.

FACTS

The Governmental Accountability Project (GAP) is a nonprofit organization which has been an advocate on behalf of "whistleblowers" on safety-related issues at various nuclear power projects. In the past, GAP has been able to reach accommodations with the Nuclear Regulatory Commission (NRC) permitting safety information and allegations in GAP's hands to reach appropriate government officials.

Ms. Garde, the respondent, is an attorney and director of the Midwest Office of GAP. On January 20, 1987, she wrote a letter to Victor Stalle, Jr., the NRC's Executive Director for Operations, and to Texas Attorney General James Mattox stating that GAP had begun investigating worker allegations concerning the safety of the South

THE GEODESIC NETWORK

1987 Report On Competition in the Telephone Industry

Prepared by Peter W. Huber as a consultant to the Department of Justice in accordance with the court's decision in the matter of U.S. v. Western Electric Company, 552 F. Supp. 131, 194-5 (D.D.C. 1982).

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MOBILE RADIO SERVICES

Cellular radio, conventional mobile telephone,¹ offshore radio service, rural radio service, specialized mobile radio, air-ground radio telephone, maritime mobile services, and paging services offer subscribers one- or two-way communications through mobile receiver units.² The geographic scope of any particular service depends on the location, height, and power of the individual transmitters contained in a mobile radio system, all of which are prescribed by FCC licenses.³ The services vary widely in sophistication.

Each mobile radio service uses radio transmitters, mobile receivers and central control facilities. The central control facilities are connected on one side to the landline telephone network, and on the other to radio transmitters dispersed in the field to provide broad geographic coverage. Connection to the landline network is usually over dedicated access lines; connection to the field transmitter is over a land line or radio microwave facility.

Paging services convert a message initiated by a seven-digit, landline telephone call into a radio signal transmitted to a specified paging unit ("beeper"). The signal as decoded by the unit may be tone-only, tone-plus-voice, numeric, or alphanumeric.⁴ A single transmitter

¹ The FCC has assigned forty-four channels (eighteen in 150 MHz band and twenty-six in the 450 MHz band) for two-way common carrier mobile services. See 47 C.F.R. section 22.501(b). These channels were originally allocated separately between wireline and non-wireline licensees. This separate allocation scheme was eliminated in 1984. See, e.g., Elimination of the Separate Frequency Allocation Structure in the Public Land Mobile Services, 99 F.C.C.2d 311 (1984). In addition, the FCC has assigned twelve channel blocks in the 470-512 MHz band in certain metropolitan areas for two-way common carrier mobile services. See 47 C.F.R. section 22.501(k). The use of all two-way channels has declined in those major metropolitan areas where cellular radio services have been initiated. In these areas, the two-way channels are used to a greater extent for the provision of paging services.

² See generally 47 C.F.R. 22.1 et seq.; 47 C.F.R. 90.1 et seq.; and 47 C.F.R. 94.1 et seq.

³ See generally, 47 C.F.R. sections 22.100-22.121; 90.171-90.217. In addition, a common carrier mobile radio licensee must demonstrate the absence of interference with any user of the same frequency within certain prescribed distances. See 47 C.F.R. 22.15. The propagation characteristics of the various frequency bands allocated by the FCC for mobile radio services will differ depending upon the terrain. For example, a transmission on a VHF frequency (150 MHz) will travel further over a relatively flat terrain than an equivalent transmission on an 800 MHz channel.

⁴ Responding to increased demand and to industry requests for additional spectrum, the FCC in the last four years has increased the number of common carrier paging channels from eight (four in 150 MHz band and four in 35/43 MHz band) to seventy-three, by adding twenty-eight channels in the 35/43 MHz band and thirty-seven channels in the 900 MHz band. As with common carrier two-way mobile channels, the paging frequencies originally were allocated separately between wireline and non-wireline licensees. In addition to permitting services provided on exclusive paging frequencies, the FCC's rules permit common carrier paging services on certain channels allocated for conventional mobile radio service, as long as the station has the technical capability to provide two-way services.

generally covers a radius of about twenty-five miles. Central control facilities connected to multiple transmitters by telephone lines or microwave facilities provide broader coverage.

Cellular radio is a high-capacity two-way mobile telephone service.⁵ A cellular system is divided into numerous cells, each of which has its own, low-power transmitter operating on a subset of the 333 channels. The individual cells are all linked to a mobile telephone switching office (MTSO), which coordinates overall operation, and concentrates traffic for distribution among cells and with the public landline network. Access to and from long-distance services is generally through the local, landline exchange; a few cellular systems connect directly to interexchange carriers. A typical cellular system will cover between 75 and 100 percent of a Metropolitan Statistical Area, comprised of one or more urban areas and surrounding communities.

Most other mobile services are variations on these two models. Conventional mobile telephone services provide a service similar to cellular, using a lower-capacity technology suitable for low-density areas.⁶ Maritime mobile radio units are used for communications between land stations and boats; air-ground mobile services are used between land and air stations; offshore mobile stations serve offshore locations in the Gulf of Mexico; rural radio stations serve locations unserved by

(footnote(s) continued)

See 47 C.F.R. section 22.501.

⁵ The Federal Communications Commission has authorized two cellular systems in each cellular geographic service area (CGSA). Cellular Communications Systems, 86 F.C.C. 2d 469 (1981). (The FCC generally based its CGSA delineations on an area's corresponding Metropolitan Statistical Area). The FCC's rules reserved one of the two licenses in each CGSA for the local wireline telephone company affiliate, while the second cellular franchise was made available to all other entities. Cellular Communications Systems, supra at 487-92. Many of the applicants for the second license have been radio common carriers. There were many applicants for the non-wireline authorizations in each of the top ninety markets, and the licensing of these systems, particularly in the top thirty markets, took longer than the licensing of the wireline systems. Non-wireline entry into the top ninety cellular markets has thus generally come six months to a year later than entry by the wireline system.

⁶ To make a mobile-to-land call, a subscriber dials a number on the telephone handset in his vehicle. The handset scans the available channels (seven or twelve, depending on the area) to find one that is clear. The audio tones are converted to an FM radio signal, which is transmitted on the appropriate frequency to a base station antenna. This antenna separates and decodes incoming signals, and sends each signal by telephone wires or microwave to the mobile telephone switching office, which interconnects with the telephone company's local switch. From there, the call travels over the public switched telephone network to completion.

Service is provided over a single base station transmitter in each service area, which can send and receive signals over a twenty-five-mile radius; transmitters can be linked to provide broader coverage. The capacity of a conventional mobile radio system is defined by the number of frequencies. In general, each assigned frequency (or channel) can accommodate only one telephone call.

local landlines; and specialized mobile radio services provide two-way services to mobile units similar to cellular radio and conventional mobile radio services. Specialized mobile radio services possess neither the capacity nor the quality of cellular radio calls.

Mobile radio services remain substantially more expensive than landline. Table MB.1. Nevertheless, in the past five years, rapidly improving technology and the development of competition have lowered both subscriber equipment and service prices, in some instances by several hundred percent.⁸ Most common carrier mobile services are intrastate, and therefore subject to state FUC regulation. Many but not all states have deregulated and detariffed common carrier mobile services. In a recent decision, the FCC⁹ detariffed interstate conventional mobile and paging services.

Table MB.1. PRICE RANGES¹⁰

	<u>One-Way</u>	<u>Two-way</u>
Subscriber Equipment	\$75-100	\$800-4000 ¹¹
Service Initiation	---	\$0-50
Monthly Charges	\$3.50-25	\$5-60
Airtime	\$.10-.65/page or flat rate	\$0.14-2.00 /minute

⁷ In addition to these mobile radio services, there are a variety of private land mobile radio services, including public safety radio, special emergency radio, industrial radio, land transportation radio, and radiolocation services. See generally 47 C.F.R. 90.1, et seq. Private radio services are restricted to eligible entities for each service. For example, a license for a private radio mobile station in the local government radio service may be issued only to "any territory, possession, state, city, county, town or similar governmental entity ...". See 47 C.F.R. 90.17(a). In addition, all private radio services except for specialized mobile radio and private operational fixed microwave are used for internal communications needs and cannot be offered to third parties on a for-profit basis.

⁸ The most modern alphanumeric pagers, for example, use digital technology to encode and compress messages, making much more efficient use of available radio spectrum.

⁹ RCCs nevertheless remain subject to the general statutory directive that they charge just, reasonable and non-discriminatory rates, and must answer to rate and other complaints filed with the FCC. See, e.g., Preemption of State Entry Regulation in the Public Land Mobile Service, CC Docket No. 85-89, RM-4811 (rel. March 31, 1986).

¹⁰ Sources: RBOC and Telocator submissions.

¹¹ The price for subscriber equipment for air-ground services is \$5000-\$6000 per unit.

As prices have dropped, use of mobile services has mushroomed--approximately doubling, in all markets, every one to three years. The number of pagers in use nationwide grew from about 900,000 in 1979, to 2.2 million in 1982, to about 6 million today, and will grow to a projected 10 million in 1990. The new network paging services are expected to satisfy a pent-up demand of 350,000 subscribers, and a projected 1.5 million subscribers by 1990.¹² Cellular radio services arrived on the scene in 1984; between 350,000 and 450,000 customers subscribe today, and one projection is for ten million cellular subscribers by 1990.¹³

The technological frontier for all mobile services is regional and then national networking. Several foreign countries already have such systems in place.¹⁴ In 1982, the FCC allocated new paging channels for the development of nationwide paging networks. Some RCCs have already begun to use microwave or satellite technology to connect transmitters for coverage that ranges from several counties to an entire state.¹⁵ In August 1984, the FCC selected by lottery three organizations to establish nationwide paging networks by linking together local paging service providers to originate and terminate pages.¹⁶ Nationwide paging systems are expected to come on-line in 1986.¹⁷

¹² Estimates of subscription levels tend to vary widely; private and substantially deregulated providers do not readily supply this information. One March 1986 news account, for example, noted that a recent study by an industry trade group placed total cellular radio subscribership at the end of 1985 at just under 350,000, while another almost contemporaneous study estimated 250,000. See CTIA: Cellular Subscribership Tripled in '85, Communications Week 22 (Mar. 31, 1986).

¹³ Traditional radio-telephone service has also grown, from 186,000 users in 1982, to 345,000 in 1985, with demand of 1.5 million expected by 1990. Cellular radio systems are, however, entirely displacing conventional two-way service in markets with concentrated demand.

¹⁴ Canada, Japan, and Great Britain have each authorized nationwide cellular radio systems. See Cellular Radio Comes to Britain, European Telecommunications 8-9 (Jan. 1985); Yetter and Smart Promise More Aggressive Trade Policy As Japanese Propose End to Tariff on Switches and Cellular Radio Equipment, Commerce Daily (June 27, 1985). Norway, Denmark, Sweden and Finland have established a mobile telephone system that serves the entire, four-country region. See The Nordic Mobile Telephone System Sets the Stage for Future Mobile System, Telephony, 54-56 (July 23, 1984).

¹⁵ Wide-area paging does not yet represent a significant part of RCC revenues, and it is likely that demand for paging services will remain principally local.

¹⁶ See FCC Grants Licenses to 3 Companies to Build Nationwide Paging Systems, Communications Week 23 (Aug. 13, 1984).

¹⁷ Subscribers will be able to access these networks by dialing an 800 number. See Telocator, December, 1985, at 70. The network organizers are CyberTel Beep USA Nationwide Paging Partnership, National Satellite Paging, Inc., and Nationwide Paging Network.

Cellular licensees are similarly attempting to enlarge their systems' coverage through interconnection arrangements with other licensees. In creating the cellular service, the FCC stated that one of its primary goals was to encourage the nationwide availability of cellular service. Recent developments in cellular technology permit interswitch hand-off, so that a call in progress is not cut off when a customer moves from one MTSO's service area to another's.¹⁸ Eventually calls will be handed off between MTSOs in much the same transparent-to-the-user way as they are now handed off between cells.

SUPPLIERS

Among the providers of mobile services are RBOCs, radio common carriers (RCCs) and private carriers. The FCC has repeatedly concluded that competition in the provision of mobile services is both vigorous and robust.¹⁹

Who provides which services where is governed in the first instance by three largely independent tiers of regulation.

The FCC, to start with, assigns radio spectrum. It authorizes mobile services under two regulatory schemes -- common carrier and private carrier.²⁰ The FCC has granted two cellular radio licenses in each market. It reserved one for the established, landline LEC, and

¹⁸ At present, a call is simply disconnected when a subscriber drives beyond the local cellular system's coverage area. If the adjacent region is served by another cellular system, the customer can redial the call. The call will be processed automatically by the second MTSO only if the carriers operating the two systems have a "roamer" agreement. Otherwise, the customer will be asked to supply the second carrier's operator with a credit card number for billing.

¹⁹ See, e.g., Elimination of the Separate Frequency Allocation Structure in the Public Land Mobile Services, 99 F.C.C.2d 311 (1984).

²⁰ Common carrier services are regulated under 47 C.F.R. 22.1 et seq. Private land mobile services are regulated under 47 C.F.R. 90 et seq. A private carrier is permitted to offer commercial services only to subscribers who are eligible users under the FCC's rules for a particular private mobile service. See, e.g., Special Emergency Radio Service Rules, 47 C.F.R. sections 90.33-90.55; Industrial Radio Service Rules, 47 C.F.R. 90.59-90.81. For certain private radio services, however, such as specialized mobile radio and private operational fixed microwave services, the eligibility restriction is only minimal and licensees are able to offer mobile services to customers that would otherwise obtain service from a common carrier mobile service. A private carrier generally provides the same services and uses the same equipment as a common carrier system. However, most private mobile radio frequencies may be shared by an unlimited number of licensees. See, e.g., 47 C.F.R. sections 90.75, 90.171-90.185. The FCC's rules currently prohibit SMR licenses from being awarded to any wireline common carrier. See 47 C.F.R. 90.352 and 90.603.

awarded the other among competing applicants.²¹ The Commission has, however, allocated channels for use by multiple private and public providers of one- and two-way paging services. For example, in 1967, the FCC allocated one half of the "guardband" frequencies used for paging purposes to wireline telephone companies, the other half to the ROCs.²² Private radio frequencies were allocated to eligible entities, which often did not include LECs.

Secondly, many mobile and paging services are intrastate. Many states regulate common carrier mobile services,²³ and some restrict new carrier entry by requiring a showing of public need for new service, a demonstration that existing service is not satisfying demand, or a showing that new entry will not harm existing carriers. Other states apply various technical, financial and public need standards that often delay, restrict or increase the costs of entry. Even in states with relaxed entry barriers, administrative processing delays can prevent state authorization for a year or more. In response to these regulatory restrictions, the FCC has preempted various state entry regulations for conventional mobile and paging services.²⁴

Finally, the MFJ restricts the geographic range of mobile services offered by the BOCs. BOCs may provide intraLATA mobile exchange

²¹ See, Cellular Communications Systems, 86 F.C.C.2d 469 (1981), on reconsideration, 89 F.C.C.2d 58, on further reconsideration, 90 F.C.C.2d 571 (1982). In the FCC's view, the reservation of frequencies for wireline carriers "constitutes the most practical, and quite possibly the only, way to achieve the Commission's twin goals of making quality mobile telephone service available to the public as rapidly as possible while promoting competition whenever feasible." Memorandum Opinion and Order on Reconsideration, supra, 89 F.C.C.2d at 70.

²² Amendment of Part 21 of the Commission's Rules, 12 F.C.C.2d 841 (1968), recon. denied, 14 F.C.C.2d 269 (1968), aff'd sub nom. Radio Relay Corp. v. F.C.C., 409 F.2d 322 (2nd Cir. 1969).

²³ Generally, the states do not regulate private radio services. Lately, however, a few states have sought to assert jurisdiction over private radio services, such as specialized mobile radio, that are offered to third parties on a for-profit basis.

²⁴ Preemption of State Entry Regulation of the Public Land Mobile Service, CC Docket No. 85-89, RM-4811 (rel. March 31, 1986). This decision was ultimately stayed by the Court of Appeals in view of the Supreme Court's recent decision in Louisiana Public Service Commission v. Federal Communications Commission et al., ___ U.S. ___ (No. 84-871, May 27, 1986). A court of appeals recently reversed the FCC's order preempting state entry regulation of common carrier paging services provided on FM subcarrier channels. See California v. F.C.C., ___ F.2d ___, (No. 85-1112, D.C. Cir. Aug. 22, 1986). In addition, the FCC has preempted state regulation of nationwide paging services. Memorandum Opinion and Order on Reconsideration (Part 2), 93 F.C.C.2d 908 (1983). The Commission recognized that state entry and technical regulation could impede the development of nationwide paging services by frustrating entry of network affiliates and by preventing the industry to develop national technical standards necessary to an effective nationwide paging network.

services of any description, inside or outside their own LATAs, but may not operate any interLATA mobile or paging services without obtaining a waiver.²⁵ Since divestiture, the regional companies have requested and received numerous clarifications and waivers permitting them to provide interLATA mobile and paging services,²⁶ and to expand the geographic scope of their mobile and paging services.

Although there has been some consolidation among the ROCs in the last several years,²⁷ competition in the provision of paging services is especially vigorous.²⁸ Table MB.2. ROCs are now offering paging service in over 3700 communities throughout the United States. At present, almost 750 radio common carriers serve about 75 percent of the market. Many areas are served by multiple ROCs, particularly in states that deregulated ROC entry several years ago.²⁹ In the NYNEX territory, for example, there are forty paging companies providing service to over 500,000 pagers. ROCs also face the potential for competition from FM and TV broadcast stations, which can use their powerful transmitters to provide paging over subcarrier frequencies,³⁰ and from private paging

²⁵ Before divestiture AT&T requested on behalf of the BOCs a blanket waiver permitting the BOCs to operate mobile systems without regard to LATA boundaries. In response to DOJ opposition, the waiver was modified to cover interLATA cellular radio operations in only nine specific geographic areas. On November 1, 1983, the Decree Court granted the waiver, subject to certain conditions. In its decision, the Court observed that market boundaries for landline services bear no technical or economic relationship to the natural boundaries for cellular markets. United States v. Western Electric Co., 578 F. Supp. 643 (D.D.C. 1983).

²⁶ See, e.g., United States v. Western Electric Co., 578 F. Supp. 643 (D.D.C. 1983) (Decree Court approved waivers permitting interLATA cellular service in nine markets where cellular systems, as approved by FCC, extended across LATA boundaries); Opinion, United States v. Western Electric Co., Civil Action No. 82-0192, (D.D.C., filed February 26, 1986) (approving waiver to permit Pacific Telesis to acquire Communications Industries, Inc.'s interexchange paging and conventional mobile telephone facilities, but requiring Pacific to dispose of interLATA microwave links used with these services). See also Orders dated June 20, 1986, (granting waiver requests by Bell Atlantic and Ameritech to provide interLATA paging services).

²⁷ Metromedia, MCCA, and Page America, for example, have been aggressively acquiring local paging and mobile radio operations.

²⁸ See, e.g., Elimination of the Separate Frequency Allocation Structure in the Public Land Mobile Services, 99 F.C.C.2d 311 (1984).

²⁹ For example, in Florida which deregulated entry in 1979, seven ROCs serve Daytona Beach, seven serve Fort Lauderdale and nine serve Miami.

³⁰ For example, American Diversified Capital Corporations's Telecommunications Group announced it would begin offering the first nationwide paging service over FM radio broadcast bands in late 1985, using a portion of the broadcast spectrum used by CBS-affiliated radio stations in seven major markets around the country. See Nationwide Paging Service Announced, Communications Week 6 (Apr. 1, 1985). The technology for paging on FM and TV broadcast stations, however, has not developed as quickly as anticipated.

operations. The top eight ROCs account for only about 30 percent of all paging subscribers, while the top eight wireline carriers serve between 20 to 30 percent. Pacific Telesis serves approximately 10 percent of the paging subscribers, or about as many as Metromedia. The other six BOCs each serve about 2 to 4 percent of the market.

The most significant recent changes in RBOC participation in these markets have resulted from their acquisitions of ROC operations. Pacific Telesis bought the paging operations of Communications Industries, Inc., which was then the fourth largest provider with a 6 percent market share and operations in seven states. NYNEX purchased certain paging operations of Lin Broadcasting Corporation, the eleventh largest provider serving about 1 percent of the market.³¹ Southwestern Bell is now proposing to acquire all of Metromedia's paging operations, which would make Southwestern the largest paging company in the country with about 14 percent of the nationwide market. BellSouth has executed an agreement with Mobile Communications Corporation of America (MCCA) to acquire 15 percent of that company. These acquisitions have extended BOC operations outside their regions, bringing BOCs into head-to-head competition with each other.³² Figure MB.3.

Competition in cellular markets is developing rapidly. In the last four years the FCC has granted cellular radio licenses for both wireline and non-wireline systems in the top 120 markets. It has authorized the construction of wireline cellular carriers in another thirty to fifty markets. Wireline service is available in eighty-two of the top ninety markets, non-wireline in forty-six of the top ninety.³³ As of August 1986, both the wireline and non-wireline

³¹ Relocator Bulletin, February 14, 1986, at 5.

³² Conventional mobile telephone services are available in over 2900 communities throughout the country. As in local paging markets, most areas are served by numerous mobile radio providers. Competition among mobile radio providers is significant. In many areas where cellular radio services have come on line the demand for conventional mobile services has diminished due to the greater reliability and quality of cellular services in comparison to the older two-way technology.

The BOCs are major providers of mobile radio services. Because of the FCC's original spectrum division among wireline and radio common carriers in the assignment of mobile frequencies, the BOCs were usually able to construct wide-area two-way networks covering vast geographic areas. For example, Pacific operates a state-wide, two-way service in California on the VHF two-way frequencies. As with paging and cellular radio services, some BOCs are seeking to expand their mobile operations outside their regions through the acquisition of RCC facilities.

³³ Wireline systems are leading the race because the FCC licensed them first. During the "headstart" period, the non-wireline operator will usually resell the wireline service, to develop a customer base that can be readily transferred to its own system once it becomes operational. The FCC has required cellular operators to permit the resale of their services by independent resellers. The FCC has also kept open the possibility of delaying the initiation of wireline carrier operations for up to six months. But the Commission has not in fact imposed the waiting period on any wireline carrier.

Table MB.2. PAGING SYSTEM OPERATOR MARKET SHARES
(1986 percent of pagers)¹

	<u>Non-Wireline</u>
Metromedia ²	10
Graphic Scanning	6
Mobile Communications Cor.	6
McCaw Communications	4
Paging Network	2.5
Page America	1.4
Metrocall	1
Ram Broadcasting	1
Cricor Comm.	0.8
Communications Properties	0.8
Omni Communications	0.6
Qualicom	0.6
Radiofone	0.5
Message Center Beepers	0.3
Cox-Cybertel	0.3
Daniels and Associates	0.3
Answer Iowa	0.2
Others	33
<u>Total Non-wireline</u>	<u>70</u>
	<u>Wireline</u>
Pacific Telesis ³	10
NYNEX ⁴	3-4
Southeastern Bell ⁵	2-3
Bell Atlantic	2-3
US West	2-3
BellSouth	2-3
Ameritech	2-3
GTE	1-2
Others	1-2
<u>Total Wireline</u>	<u>30</u>
<u>Total Pagers</u>	<u>5,900,000</u>

¹ Source: Radio Communications Report (March 15, 1986); The Eastern Management Group; and discussions with Telocator and RBOC representatives.

² Southwestern Bell has proposed to purchase Metromedia's paging interests.

³ Percentage includes pagers acquired in merger with Communications Industries, Inc.

⁴ Percentage accounts for the acquisition of Pageboy paging facilities.

⁵ Percentage does not include proposed acquisition of Metromedia's paging interests.

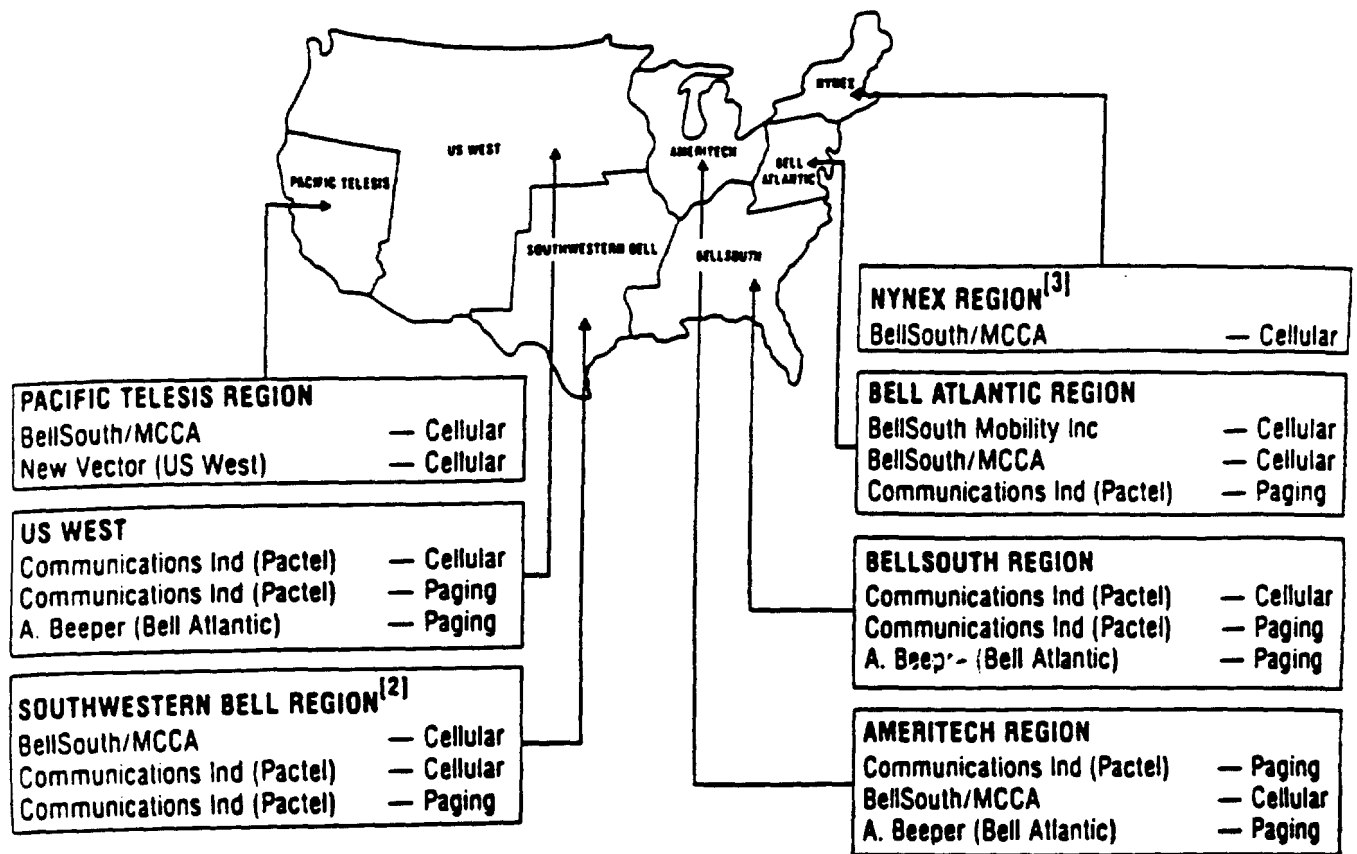


Figure MB.3. Mobile Competition Among Former Bell System Companies¹

¹Source: RBOC submissions.

carriers were operating in nearly half of the top-ninety markets, and only one carrier was operating in almost forty of the top-ninety markets. In markets with two operating cellular systems, price and service competition is intense, at both the wholesale and retail levels.³⁴ There is also competition among resellers who purchase cellular service in bulk from the facilities-based carriers at wholesale rates and then provide service to their own customers.

The RBOCs and GTE are major providers of cellular radio services. Their LECs operate most of the cellular radio systems within their own regions. Within the last year, the BOCs have been increasing their presence in cellular radio services outside their region. Pacific Telesis, for example, now has equity interests in the non-wireline cellular systems in several out-of-region markets, including, Atlanta, Tampa-St. Petersburg, Omaha, Louisville, and Dallas. US West operates the non-wireline system in San Diego, where it competes head-to-head against Pacific's wireline system. Out-of-region competition among BOC cellular systems will increase significantly with Southwestern's pending acquisition of Metromedia's cellular interests in six out-of-region markets, and BellSouth's joint venture with Mobile Communications Corporation of America's cellular systems in twelve out-of-region markets.

While these consolidations are concentrating a large market share in former members of the Bell family, competition is not being visibly undermined; indeed, it quite possibly is being enhanced. Wherever they are permitted to, the RBOCs are competing vigorously against each other. No oligopolistic entente cordiale among the RBOCs has emerged.

ACCESS

All mobile radio services require access to the local exchange for the completion or initiation of mobile calls. Paging services are reached exclusively through the landline exchange.³⁵ And landline

³⁴ In Chicago, for example, competition at the wholesale level focused on price and resulted in a rapid decline in rates. In the New York/New Jersey and Boston areas price competition has also been vigorous. NYNEX Mobile, for example, has discontinued airtime charges for incomplete calls, discontinued or reduced feature activation charges, introduced volume discounts, and offered demonstration periods.

³⁵ An RCC providing a paging service obtains trunk lines from the central office to the paging system terminal. Depending on the types of paging services provided, one trunk line often suffices for several hundred paging customers. A person initiating a page dials the receiver's local telephone number. The call is switched to the RCC paging terminal, and the LEC also transmits the last four digits dialed. The calling party may then transmit additional information by voice or using the telephone's touch-tone keypad. The RCC paging terminal relays the message (or simply the dialed-number for a tone-only pager) to the RCC's base station, usually over telephone company private-line circuits, and hence the pager over the air. Some paging operators allow their customers to be paged toll-free from outside the local calling area. These operators use either foreign exchange service or INWATS, the equivalent of an 800 service.

phones outnumber mobile phones by three-hundred to one: a local call to or from a mobile phone is thus very likely to pass through the local exchange. LEC facilities are also used extensively to link cellular transmitters to the MTSO, and to link the MTSO to interexchange carriers for the completion of long distance calls.³⁶ Providers of mobile services must also obtain blocks of telephone numbers from the LEC to assign to individual receivers.³⁷

Interconnection

LEC revenues from providing interconnection to competing mobile carriers are minimal compared with the revenues at stake in capturing a larger share of the mobile services market. Market factors alone therefore do not impose much discipline on LEC provision of local interconnection.

Regulation, on the other hand, is pervasive.³⁸ As far back as 1949, the FCC took note of the competitive advantages that inhere in a wireline carrier's control of local landline facilities.³⁹ In its 1967

³⁶ Direct connection from a cellular switch to an IC's POP is possible over LEC-supplied lines or other dedicated transmission links. One of the first such arrangements was reportedly completed in February 1986, between NewVector, the cellular arm of U S West, and AT&T. See NewVector Signs Direct Connection Agreement with AT&T, Communications Week 29 (Feb. 3, 1986).

³⁷ In 1977 the FCC noted that interconnection issues between LECs and RCCs include RCC status as common carriers; reasonable interconnection terms and conditions by wirelines on reasonable request by RCCs; form of transmission over radio transmitter links; availability of seven-digit telephone numbers and charges therefor; effective liaison arrangements; elimination of maintenance charges; directory listing practices; rationalization of end user taxes; a plan for single-number access to one-way signaling systems related to usage; resale of INWATS service; compensation to RCCs for handling toll traffic and continued recognition of new technology and innovations. See Interconnection Between Wireline Telephone Carriers and Radio Common Carriers, 63 F.C.C.2d 87 (1977).

³⁸ The Decree Court generally deferred issues of interconnection of radio carriers to the FCC. See United States v. Western Electric, supra, 552 F. Supp. at 131, 196 n. 269 (D.D.C. 1982), aff'd mem. sub nom. Maryland v. United States, 460 U.S. 1001 (1983). When it granted early waivers to permit BOCs to offer limited, interLATA, mobile services the Court did, however, require the BOCs to offer each non-wireline licensee interconnection on the same terms and conditions, including price, as they provide to their own mobile radio systems. The Court also required the BOCs to lease all interLATA facilities for their mobile radio systems from interexchange carriers on the same terms available to competitors. See United States v. Western Electric Co., supra, 578 F. Supp. at 651-652.

³⁹ See General Mobile Radio Service, 13 F.C.C. 1190, 1231 (1949). However, the FCC believed at the time that interconnection was best left to individual negotiations, and it exhorted the landline carriers to provide interconnection. AT&T and the local Bell Operating Companies nevertheless refused to provide interconnection to competing RCCs until 1960. In 1960 AT&T agreed with the National Mobile Radio System (NMRS) to interconnect RCCs upon a finding that interconnection would be in the public interest. But interconnection on this loose standard remained difficult to obtain. A complaint was filed by NMRS with the FCC and was pending for over 5 years.

assignment of spectrum for paging purposes the FCC adopted three specific "equal access" rules delineating the terms of competition between the wireline carriers (who received one half of the available spectrum) and the ROCs. Wireline carriers were required to offer the non-wirelines the same type of interconnection, at the same tariffs, and with access to the same discounts, as they offered to their own, mobile-service, affiliates.⁴⁰ These interconnection principles were subsequently extended to two-way mobile services as well,⁴¹ and later formed the basis for the FCC's cellular interconnection requirements.

An FCC investigation into the Bell System's interconnection practices⁴² resulted in a 1975 settlement agreement between AT&T, other wireline telephone companies, and the National Association of Radiotelephone Systems, that established interconnection standards and contained an "illustrative tariff."⁴³ The Commission currently requires

⁴⁰ The FCC explained:

The licensee shall offer to make available to the non-wireline carriers for one-way signaling purposes the same dial access interconnection facilities as those utilized by the wireline common carriers in the community; further that the charges for such interconnection, and all other facilities of the wireline company used by the non-wireline carriers in the one-way signaling service... shall be identical with those costs used by a wireline company... and finally, if a wireline carrier offers or purports to offer any free or reduced rate service in connection with its one-way signaling service, it shall provide the identical service so offered or purported to be offered to customers of any competing non-wireline carrier at the same reduced rate or free of charge.

See Amendment of Part 21 of the FCC's Rules, 12 F.C.C.2d 841, 852, recon. denied, 14 F.C.C.2d 269 (1968), aff'd sub nom. Radio Relay Corp. v. FCC, 409 F.2d 322 (2nd Cir. 1969.)

⁴¹ Marine Mobile Radio, Inc., 63 F.C.C.2d 266, 269 (1977).

⁴² AT&T (Offer of Facilities for Use by Other Common Carriers), 52 F.C.C.2d 727, 733 (1975).

⁴³ Interconnection Between Wireline Telephone Carriers and Radio Common Carriers, 63 F.C.C.2d 87, 89-95 (1977). The FCC identified the following principles underlying the industry settlement:

First, RCCs are entitled to interconnection on reasonable terms and conditions, including arrangements necessary to establish physical connections for the interexchange of traffic and other facilities an RCC requires for operation of its systems.

Second, RCCs are not to be considered end users of wirelines' services.

Third, RCCs are entitled to one-third of all interstate and intrastate toll message charges originating sent-paid from stations, or placed on a received-collect basis to stations, on their systems.

Fourth, wirelines should make available seven-digit telephone numbers for each paging device or two-day mobile unit of an RCC subscriber.

Fifth, BOCs should adopt a paging service plan, the charge for which is to be "more related to usage" than arrangements antedating 1975.

Sixth, BOCs must allow resale of their intrastate INWATS service by RCCs' paging operations, to the extent such resale is consistent with state tariff requirements.

By its terms, the 1977 Memorandum of Understanding was to expire on January 31, 1980. At the request of the parties, it was extended until July 31, 1980, so that a new

all LECs to provide reasonable interconnection arrangements to mobile radio licensees for the provision of mobile radio service.⁴⁴

The ongoing FCC regulation of cellular services illustrates the regulatory principles in practice. The interconnection issues for non-wireline cellular carriers center on the form of interconnection offered by the LEC and on access to telephone numbers issued by the LEC. In its 1982 Reconsideration Order, the FCC declared that its interconnection requirements were intended to provide competing carriers with "equal" or "equivalent" access to the local exchange network, "while permitting the carriers involved to negotiate specific interconnection arrangements to accommodate differences in cellular system design."⁴⁵ The FCC identified several specific interconnection standards, such as requiring every wireline carrier applying for a permit to describe its proposed interconnection plans with enough specificity to allow competitors to fashion similar interconnection arrangements.⁴⁶ At the same time, the FCC left wireline and non-wireline carriers free to negotiate other arrangements, as technological considerations warranted.⁴⁷

Three basic types of interconnection arrangements are available to connect the cellular system's Mobile Telephone Switching Office (MTSO) to the local landline network. Type 1 interconnection treats the MTSO

(footnote(s) continued)

agreement could be negotiated. The new agreement, which the FCC accepted in October, 1980. Interconnection Between Wireline Telephone Carriers and Radio Common Carriers, 80 F.C.C. 2d 352 (1980), continued the terms of the 1977 MOU and added two new provisions. First, operating telephone companies agreed to lower their rates for central office numbers in recognition of the short duration of paging calls. Id. at 377-78. Second, AT&T agreed to implement a Single Number Access Plan, under which RCCs offering wide area paging services that transcend operating companies' exchange area boundaries could provide service with one paging number, resulting in lower costs. Id. at 378-79.

Just prior to divestiture, RCCs across the nation received notifications from the BOCs that agreements based on the 1980 Memorandum of Understanding would not be renewed after their termination in late 1983. In place of the negotiated agreements, the BOCs sought to impose access charges. Despite over five years of explicit recognition that RCCs are co-carriers, the BOCs attempted to justify such charges on the theory that RCCs were either end users or interexchange service providers. The FCC rejected BOC arguments in support of access charges for paging and conventional mobile radio systems stating that "RCCs are not end users except to the extent that they use exchange facilities for administrative purposes" and that RCCs "are not and should not be treated as interexchange carriers MTS/MTS Market Structure, 97 F.C.C. 2d 834, 882-83 (1984).

⁴⁴ See Amendment of Part 21 of the FCC's Rules, 12 F.C.C.2d 841 (1968), recon. denied, 14 F.C.C.2d 269, aff'd sub nom. Radio Relay Corp. v. FCC, 409 F. 2d 269 (2nd Cir. 1968); and Cellular Communications Systems, 89 F.C.C.2d 38, 80-82 (1982); Cellular Communications Systems, 90 F.C.C.2d 371, 376-377 (1982).

⁴⁵ Cellular Communications Systems, supra 89 F.C.C.2d at 81.

⁴⁶ Cellular Communications Systems, supra 89 F.C.C.2d at 81.

⁴⁷ Cellular Communications Systems, supra 89 F.C.C.2d at 82.

as a PBX served primarily by a single end office. Type 1 interconnection offers inferior transmission quality, does not permit arrangements under which interexchange carriers bill cellular subscribers directly for toll calls, and makes inefficient use of MTSO switching facilities. Type 2A interconnection treats the MTSO as a tandem switch, with links to a number of LEC end-offices and other carriers. This provides cellular carriers with lower interconnection costs, flexible collection of customer-specific billing data, flexible administration of a numbering plan, and improved transmission. Type 2B interconnection offers, in addition, direct MTSO interconnection with specific, high-volume end-offices. The MTSO routes the cellular traffic directly to other end offices and interexchange carriers and functions as a co-carrier.

For a period, several BOCs refused to provide Type 2 interconnection to non-wireline carriers. Non-wirelines were forced to choose between accepting Type 1 interconnection and delaying the start of service until the issue was resolved.⁴⁸ Numerous complaints were filed by non-wireline carriers with state PUCs and the FCC, and a few BOCs threatened to cut off interconnection altogether if non-wirelines refused to adhere to proffered contracts for Type 1 interconnection.⁴⁹

⁴⁸ Telocator claims that none of the BOC wireline affiliates have requested Type 2 interconnection. Telocator contends that the unanimity of approach by the BOC affiliates indicates their intention to sacrifice the aggressive development of cellular technology as a potential substitute for local exchange services.

⁴⁹ For example, Indiana Bell, a subsidiary of Ameritech, refused to connect the non-wireline, Indianapolis Telephone Company, on a Type 2 basis and the non-wireline went on line with Type 1 in January 1984. In late 1984, the BOC threatened to cut off the interconnection facilities if the non-wireline did not enter into a Type 1 contract that it had on the table, and the non-wireline filed interconnection complaints with the Indiana Public Service Commission and the FCC. As a result of its FCC complaint, the non-wireline received a partial settlement ten months later under which Indiana Bell acknowledged the non-wireline's right to Type 2 interconnection. See Indianapolis Telephone Company's Proposed Findings of Fact and Order. In the Matter of Emergency Petition of Indianapolis Telephone Company to Prevent Disconnection by Indiana Bell Telephone Company, Inc., filed with the State of Indiana Public Service Commission, Cause No. 37671, November 12, 1985; Stipulation of Partial Settlement--Technical Matters, filed with the Federal Communications Commission in E-55-5, October 11, 1985. The FCC recently dismissed a related complaint, finding no evidence that Indiana Bell had engaged in anticompetitive behavior. Indianapolis Telephone Company v. Indiana Bell Telephone Co. FCC File No. E-85-5 (rel. Oct. 16, 1986).

Ohio Bell, Cincinnati Bell and Wisconsin Bell would not give Type 2 interconnection to the non-wirelines in Akron, Cleveland, Cincinnati, Canton, Columbus, Dayton and Milwaukee, respectively. The negotiations with Ohio Bell had made no progress after twelve months of discussion, and Cincinnati Bell flatly refused to provide Type 2 interconnection. On November 13, 1985, six non-wirelines filed a complaint with the Public Utilities Commission of Ohio. In early 1986 both Cincinnati Bell and Ohio Bell formally acknowledged that Type 2 would be acceptable. In the interim, however, the Cleveland non-wireline was forced to go on line with Type 1 interconnection. In Milwaukee, the state PSC required the non-wireline to use Type 1 arrangements while the issue is being considered by the state PSC.